UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,289	10/17/2005	Gereon Fehlemann	HM-620PCT	7811

40570 7590 09/20/2006

FRIEDRICH KUEFFNER
317 MADISON AVENUE, SUITE 910
NEW YORK, NY 10017

EXAMINER	
LIN, ING HOUR	

ART UNIT	PAPER NUMBER
1725	

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/525,289	FEHLEMANN ET AL.	
	Examiner	Art Unit	
	Ing-Hour Lin	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/17/05 and 1/24/06*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) *5-10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☒ Claim(s) *5-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 5-10 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, these claims have not been further treated on the merits.

Specification

2. The disclosure is objected to because there is a lack of section headings: Cross References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11; Background of the Invention; Brief Summary of the Invention; Brief Description of the Several Views of the Drawing(s); and Detailed Description of the Invention

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grove in view of Horneschemeyer et al and/or Plociennik et al.

Grove (col. 3, lines 49+) substantially teach the continuous casting mold comprising a removable cassette insert that has a uniform thickness copper facing plate 28 between the hot or casting side and the cooling side and a steel backing plate 32 for forming coolant channel between these two plates and minimizing the thermal stress attacked by the casting molten metal.

Grove fails to teach the use of differential thickness of the copper plate varied over the width and/or over the height of the mold.

However, Horneschemeyer et al (col. 3, lines 4+) teach the use of differential thickness of the copper plate varied over the width in a liquid-cooled continuous casting mold (die) for the purpose of effectively controlling cooling through varied cooling channel gap or cross sectional area on the copper plate. Plociennik et al (paragraphs 23+) teach the use of differential thickness of the copper plate varied over the height in a continuous casting mold of strands for the purpose of effectively controlling cooling through varied cooling channel gap or cross sectional area on the copper plate. It would have been obvious to one having ordinary skill in the art to provide Grove the use differential thickness of the copper plate varied over the width and/or over the height of the mold as taught by Horneschemeyer et al and/or Plociennik et al in order to effectively control cooling during casting molten metal through the casting mold.

6. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grove in view of Horneschenmeyer et al and/or Plociennik et al and further in view of Suzuki et al.

Grove in view of Horneschemeyer et al and/or Plociennik et al fails to teach the use of coolant channels run in the copper plate and at least partially in the adjacent steel charging plate.

However, Suzuki et al (col. 6, lines 39+) teach the use of coolant channels run in the copper plate and at least partially in the adjacent steel charging plate (col. 9, lines 14+) for the purpose of effectively enhancing cooling. It would have been obvious to one having ordinary skill in the art to provide Grove in view of Horneschemeyer et al and/or Plociennik et al the use of coolant channels run in the copper plate and at least partially in the adjacent steel charging plate as taught by Suzuki et al in order to effectively control cooling during casting molten metal through the casting mold.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grove in view of either Horneschemeyer et al or Plociennik et al and further in view of JP 03118943.

Grove in view of Horneschemeyer et al and/or Plociennik et al fails to teach the use of reduced thickness of the copper plate at the meniscus region.

However, JP '943 (see abstract and Fig. 2) teaches the use of reduced thickness of the copper plate at the meniscus region for the purpose of effectively enhancing cooling at the meniscus region. It would have been obvious to one having ordinary skill in the art to provide Grove in view of Horneschemeyer et al and/or Plociennik et al the use of reduced thickness of the copper plate at the meniscus region as taught by Suzuki et al in order to effectively control cooling during casting molten metal through the casting mold.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ing-Hour Lin whose telephone number is (571) 272-1180. The examiner can normally be reached on M-F (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

I.-H. Lin

9-13-06

KEVIN KERNS
PRIMARY EXAMINER